TO: The Engineering Faculty
FROM: The Faculty of the School of Electrical and Computer Engineering
RE: New Undergraduate-Level Course

The faculty of the School of Electrical and Computer Engineering has approved the following new course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

ECE 463 Introduction to Computer Communication Networks
Sem. 1. Class 3, cr. 3.
Prerequisite: ECE 264 and 302

Design and implementation of computer communication networks including several projects. The focus is on the concepts and the fundamental design principles that have contributed to the success of global Internet. Topics: digital transmission, switching and multiplexing, protocols, LAN, congestion/flow/error control, routing, addressing, performance evaluation, internetworking (Internet) including TCP/IP, HTTP, FTP, SMTP, DNS.

Reason: The School of ECE was lacking an undergraduate course in this domain. All other high ranked ECE schools or departments have had an undergraduate course on networking for years (indeed several have more than one undergraduate courses in that domain). This course is an introduction on the underlying principles of the Internet. This course was offered as an experimental course ECE 495R in the Spring 2000, Spring 2001, Fall 2001, and Fall 2002 semesters with enrollments of 13, 54, 35, and 41 students, respectively.

Mark J. T. Smith
Professor and Head

Supporting Documentation:

1. Level: Undergraduate Level

2 Course Instructor: Catherine Rosenberg

3. Course Outline:

	Topics	*Lectures*
1.	Introduction: history, evolution of networks, standardization	3
2.	Digital transmission principles and technologies	3
3.	Switching and multiplexing technologies	3
4.	Design of network: the layered approach, its advantages and shortcomings, protocols	3
5.	Performance evaluation and Quality of Service	3
6.	Data link layer: retransmission protocols (go-back n, selective repeat) and their performances, TEST	4
7.	LAN: Ethernet, FDDI, wireless (802.11)….	3
8.	Internetworking: introduction, naming, addressing, IP: fragmentation, error handling	5
9.	Routing: fundamentals, Intra-domain routing (RIP, OSPF), Inter-domain routing (BGP)	5
10.	TCP/IP and UDP	5
11.	Applications: The World Wide Web: HTTP, mail, FTP, DNS …	4
12.	Exams	3
	Total	44

4. Text: Computer Networks, A System Approach, 2nd Edition, Larry Peterson and Bruce Davie, Morgan Kaufmann, ISBN 1-55860-577-0.